Fig. 1

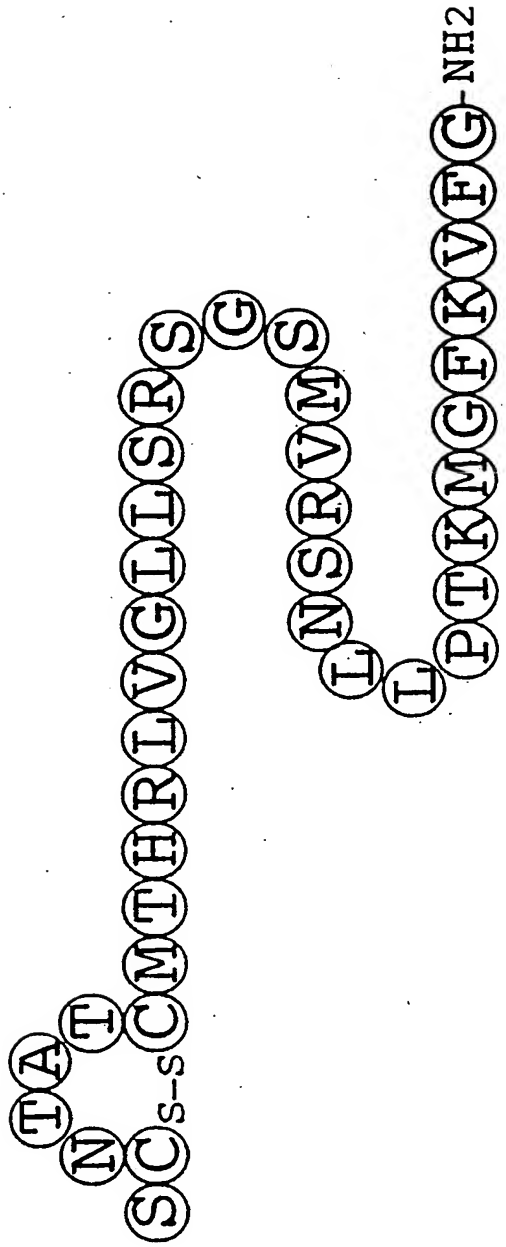

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Fig. 2

pCRSP	SCNTATCMTHRLVGLLSRSGSMVRSNLLPTKMGFKVFG-NH2
pCGRP-I	SCNTATCVTHRLAGLLSRSGGMVKSNFVPTDVGSEAF-NH2
hCGRP-I	ACDTATCVTHRLAGLLSRSGGVVKNNFVPTNVGSKAF-NH2
hCGRP-II	ACNTATCVTHRLAGLLSRSGGMVKSNFVPTNVGSKAF-NH2
hAmylin	KCNTATCATQRLANFLVHSSNNFGAILSSTNVGSNTY-NH2
pCT	CSNLSTCVLSAYWRNLNNFHRFSGMGFGPETP-NH2
hAM	YRQSMNNFQGLRSFGCRFGTCTVQKLAHQIYQFTDKDKDNVAPRSKISPQGY-NH2

Fig. 3

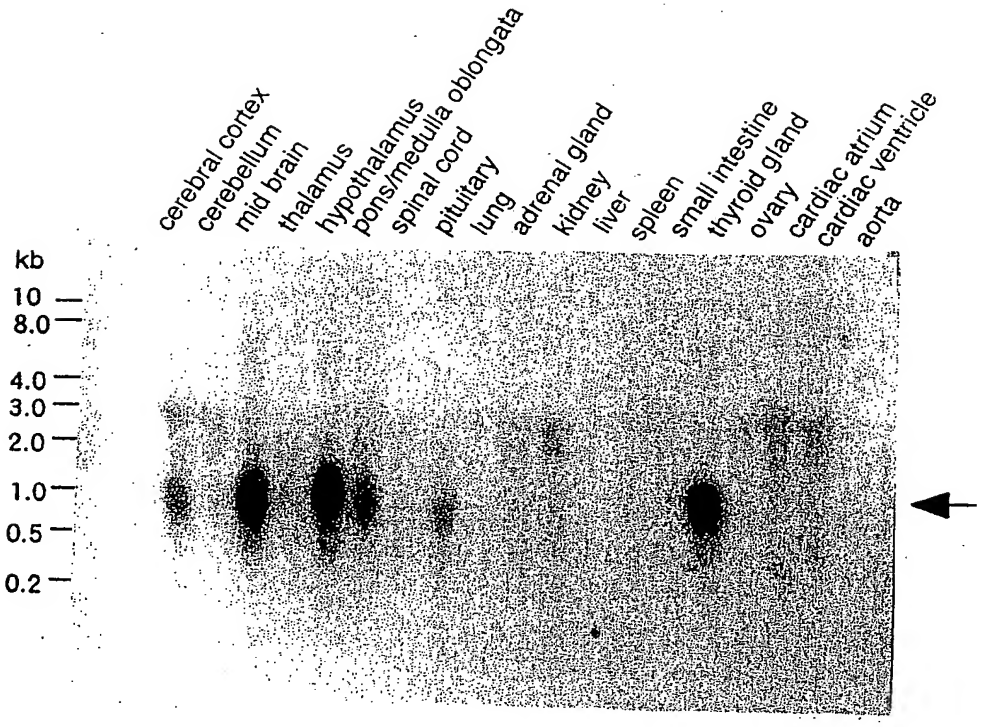

cerebral cortex
cerebellum
mid brain
thalamus
hypothalamus
pons/medulla oblongata
spinal cord
pituitary
lung
adrenal gland
kidney
liver
spleen
small intestine
thyroid gland
ovary
cardiac atrium
cardiac ventricle
aorta
kb
10
8.0
4.0
3.0
2.0
1.0
0.5
0.2

Fig. 4

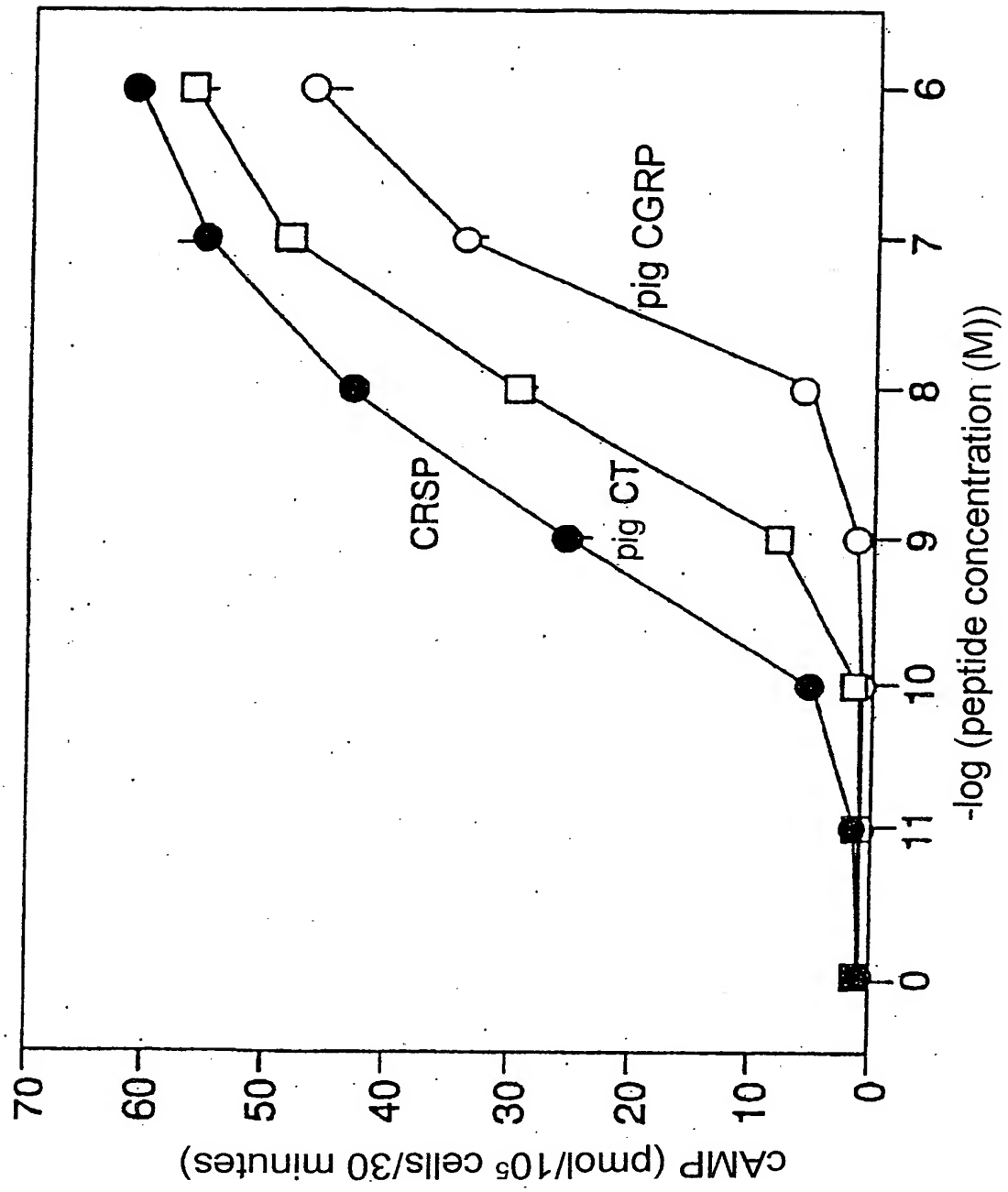

cAMP (pmol/10⁵ cells/30 minutes)
0
10
20
30
40
50
60
70
-log (peptide concentration (M))
0
6
7
8
9
10
11
CRSP
pig CT
pig CGRP

Fig. 5

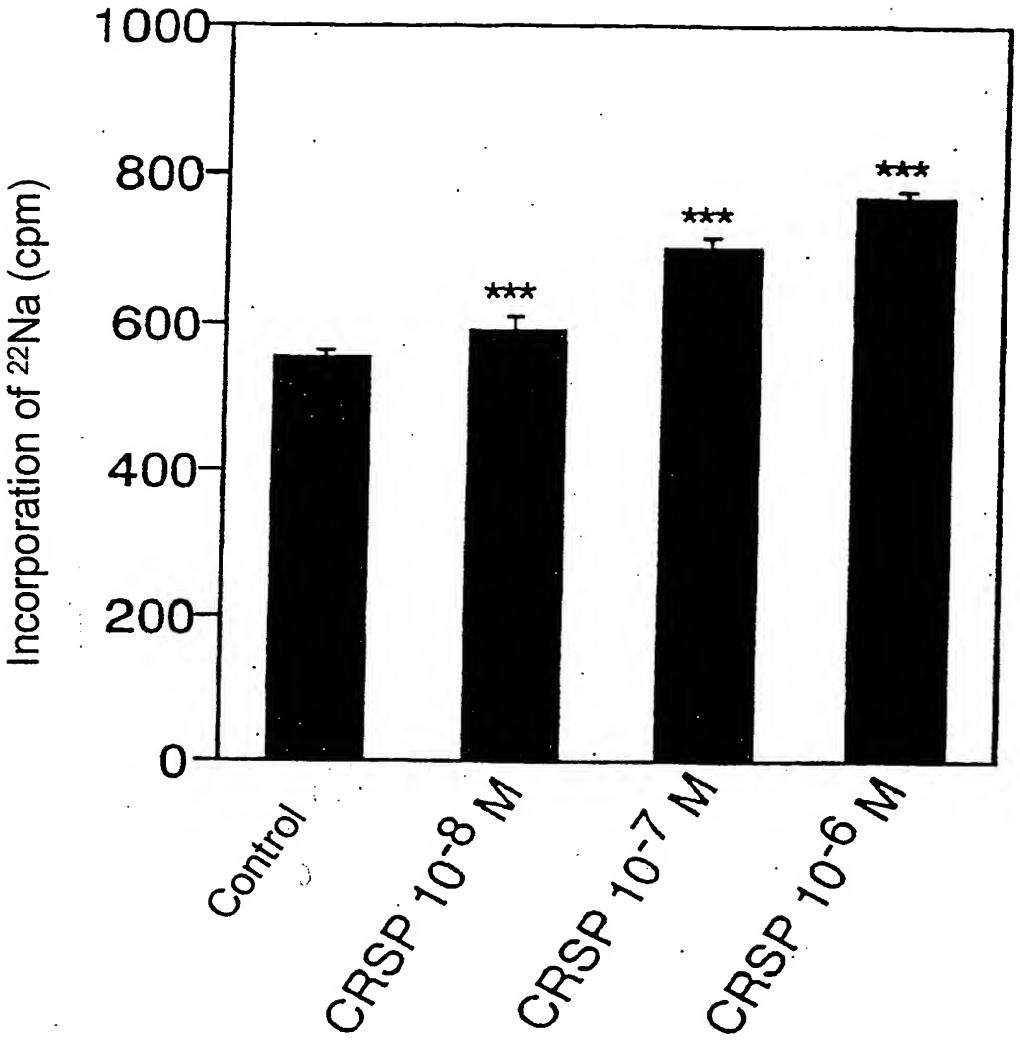

1000
800
600
400
200
0
Incorporation of ^{22}Na (cpm)
***
***
***
Control
CRSP 10-8 M
CRSP 10-7 M
CRSP 10-6 M

Fig. 6

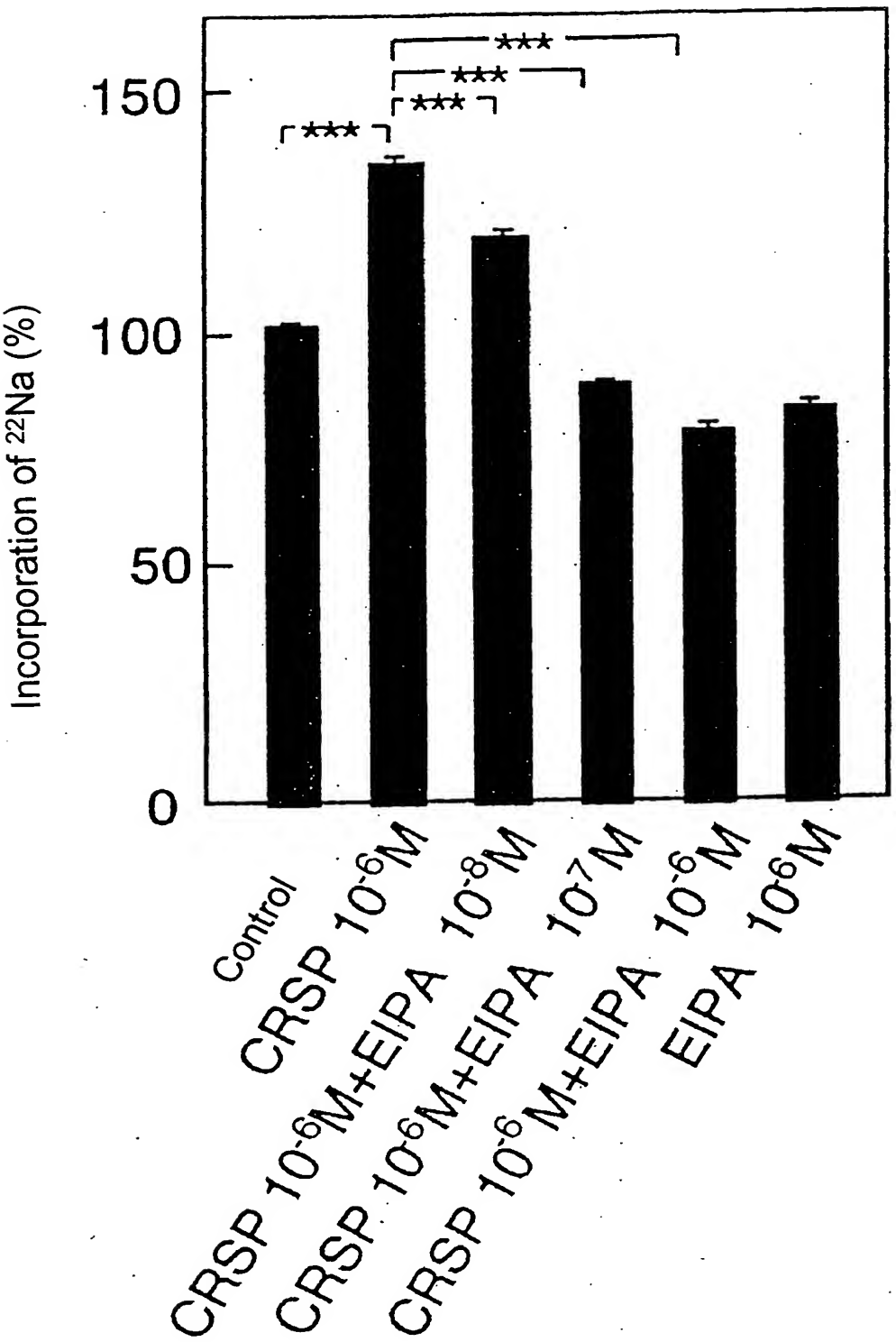

Incorporation of ^{22}Na (%)
150
100
50
0
***
***
***
***
Control
CRSP 10^{-6}M
CRSP 10^{-6}M+EIPA 10^{-8}M
CRSP 10^{-6}M+EIPA 10^{-7}M
CRSP 10^{-6}M+EIPA 10^{-6}M
EIPA 10^{-6}M

Fig. 7

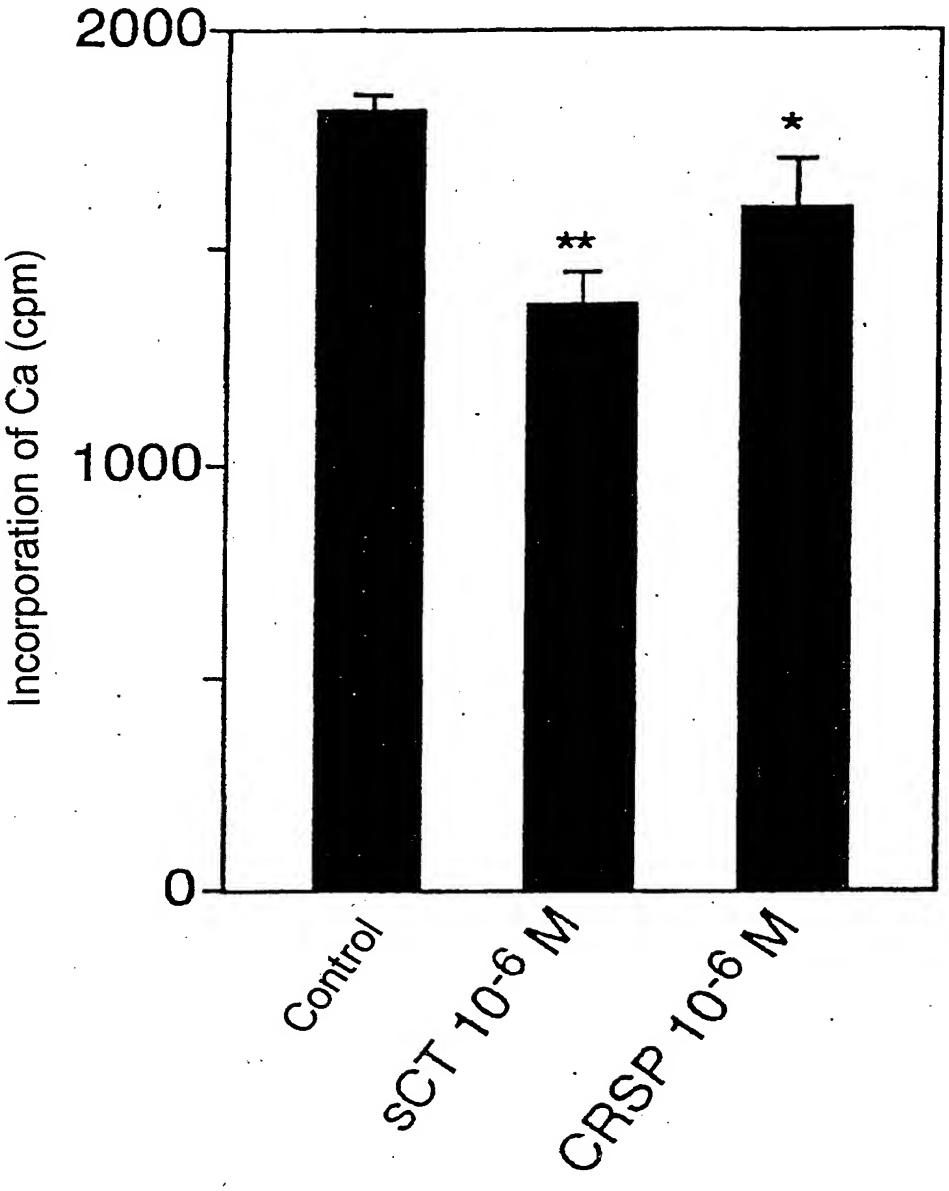

2000
1000
0
Incorporation of Ca (cpm)
**
*
Control
SCT 10-6 M
CRSP 10-6 M

Fig. 8

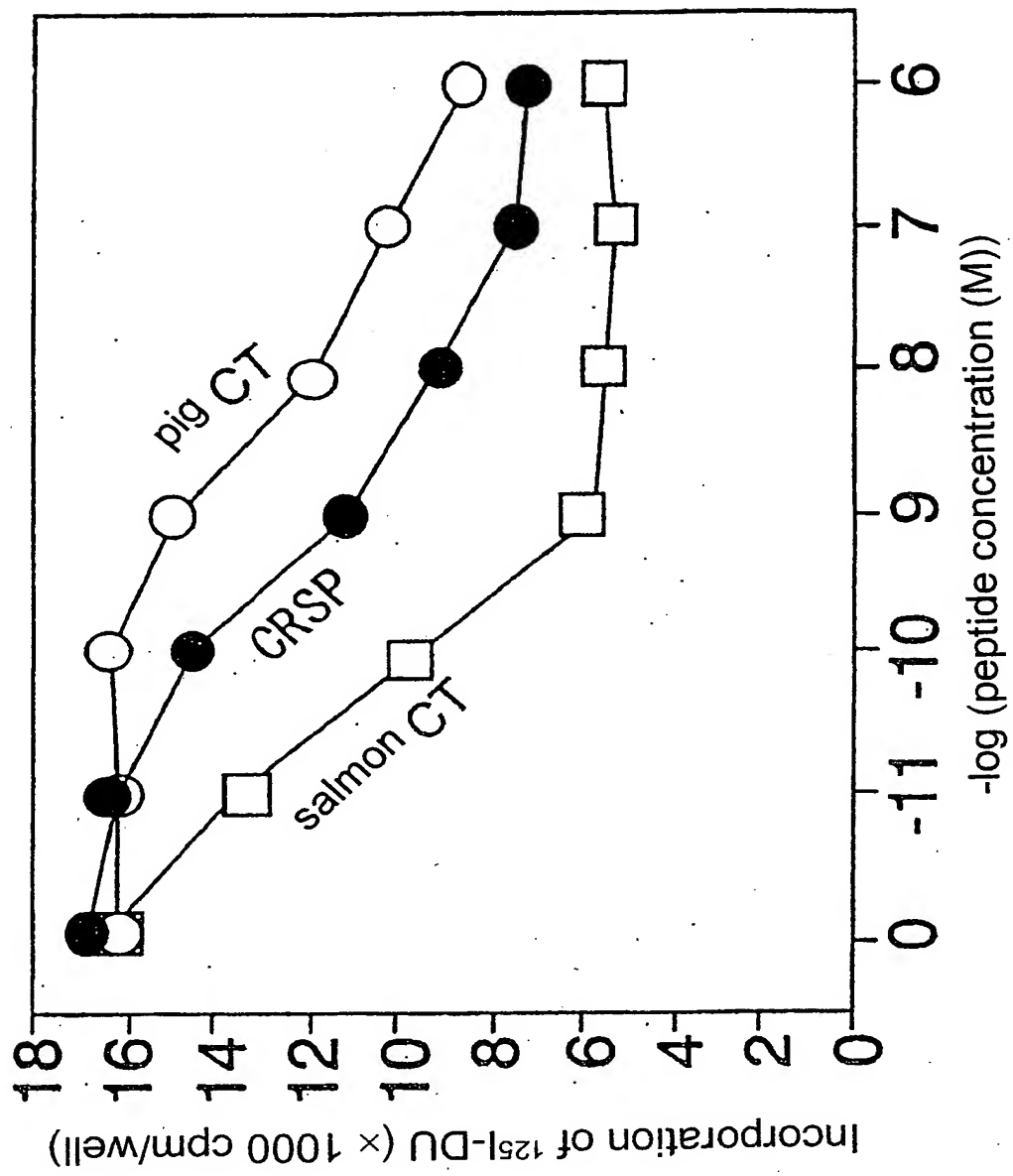

pig CT
CRSP
salmon CT
Incorporation of 125I-DU (× 1000 cpm/well)
0
2
4
6
8
10
12
14
16
18
-log (peptide concentration (M))
0
-11
-10
9
8
7
6

Fig. 9

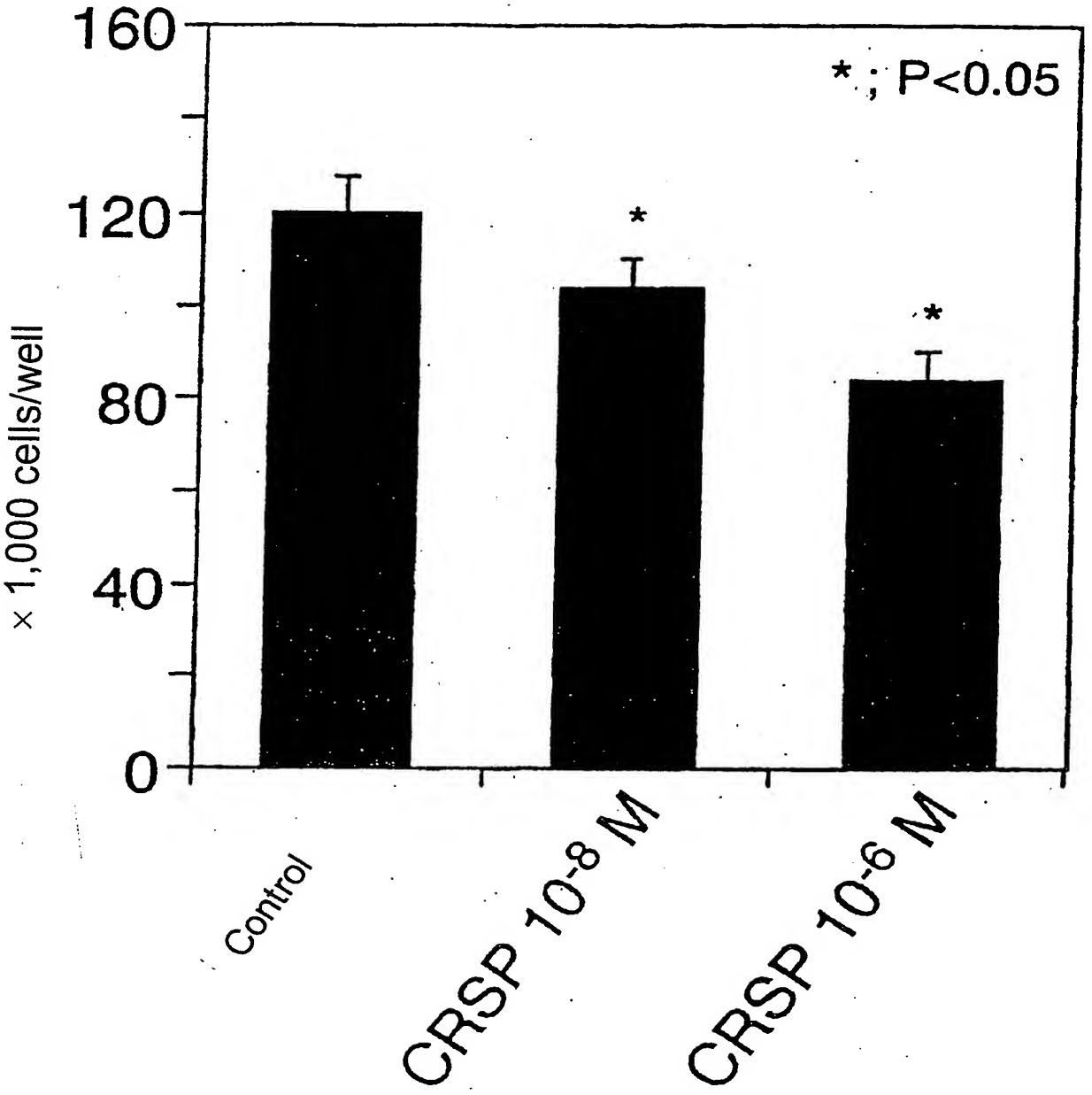

160
120
80
40
0
× 1,000 cells/well
*; P<0.05
*
*
Control
CRSP 10-8 M
CRSP 10-6 M

Fig. 10

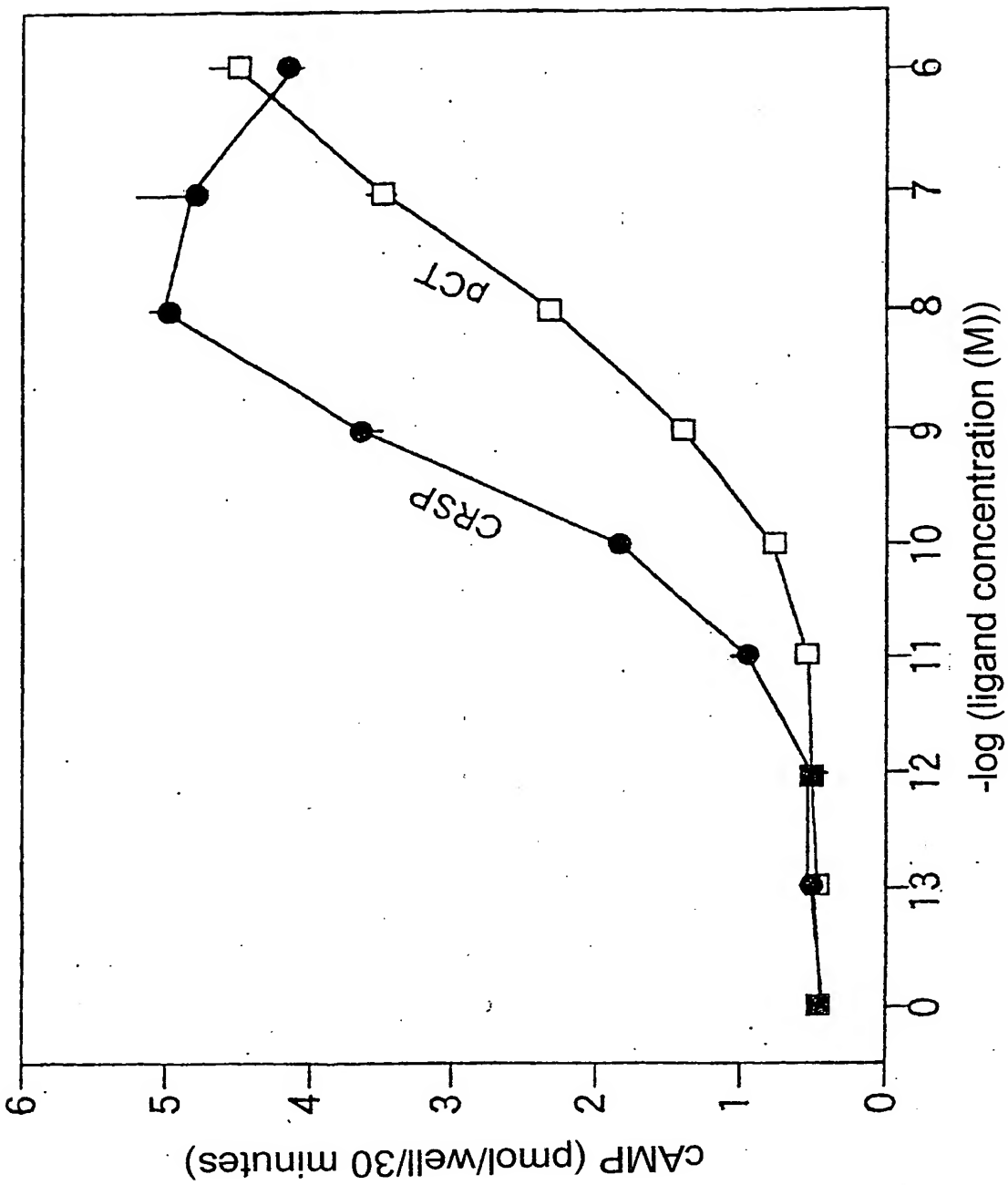

cAMP (pmol/well/30 minutes)
0
1
2
3
4
5
6
-log (ligand concentration (M))
0
6
7
8
9
10
11
12
13
pCT
CRSP

Fig. 11

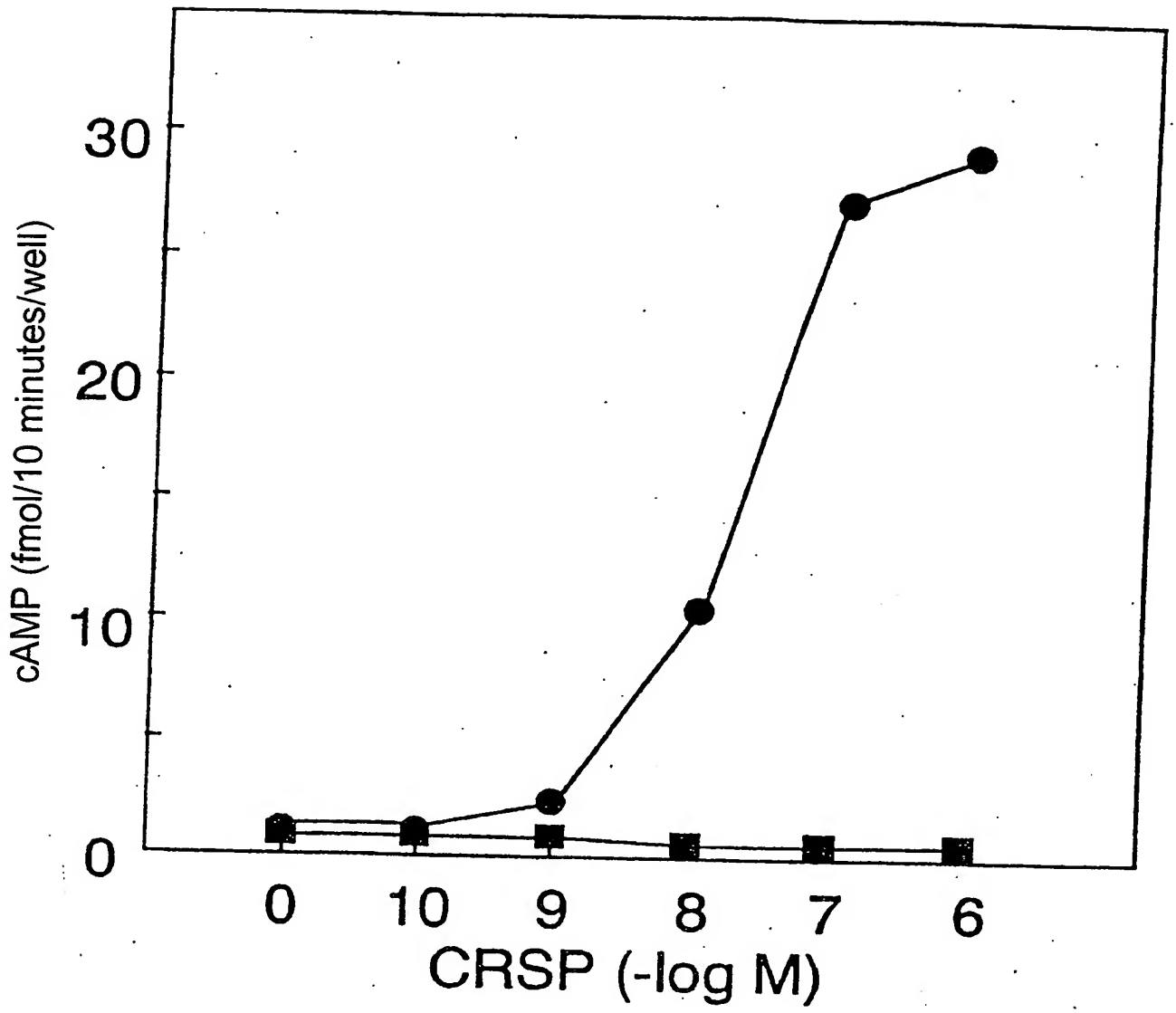


Fig. 12

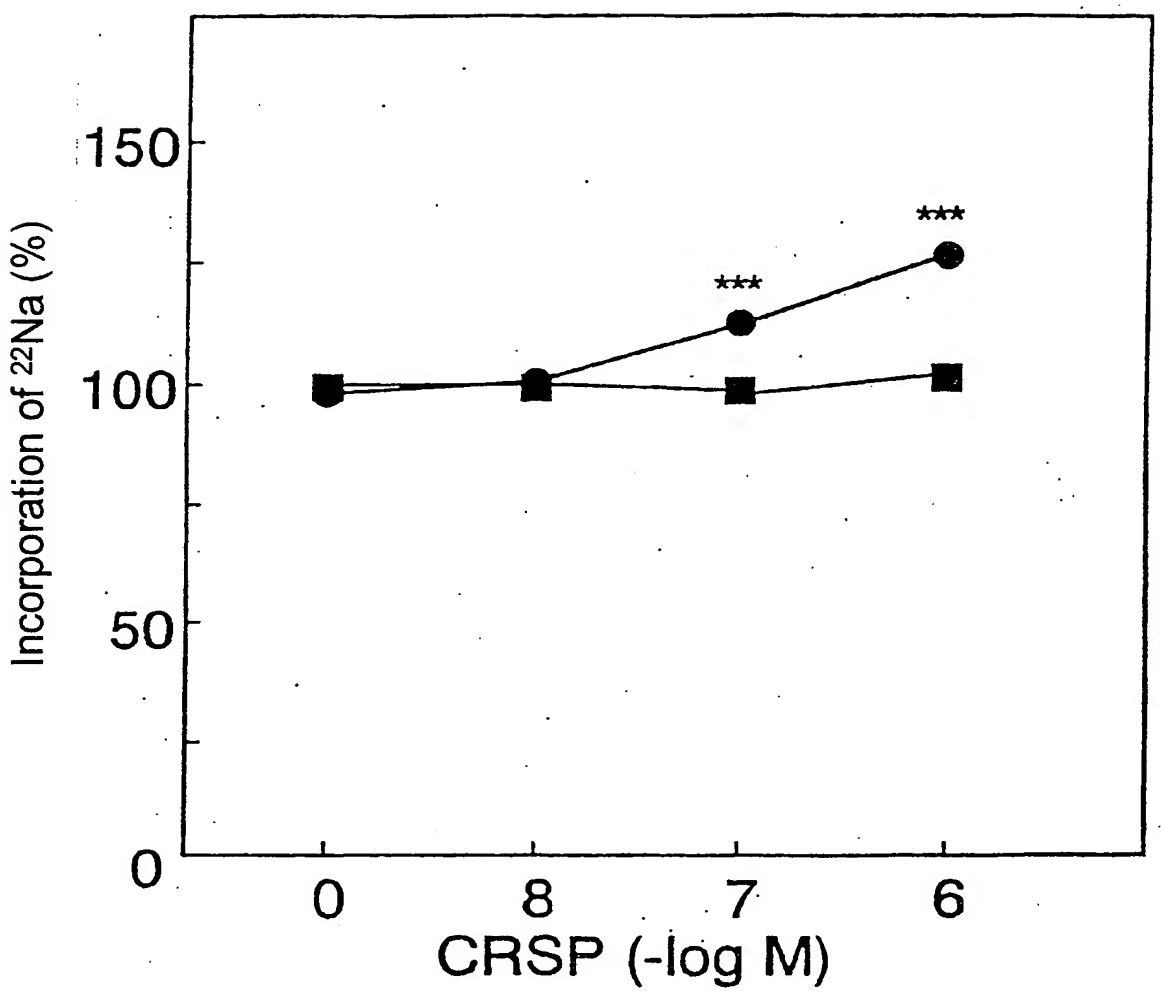


Fig. 13

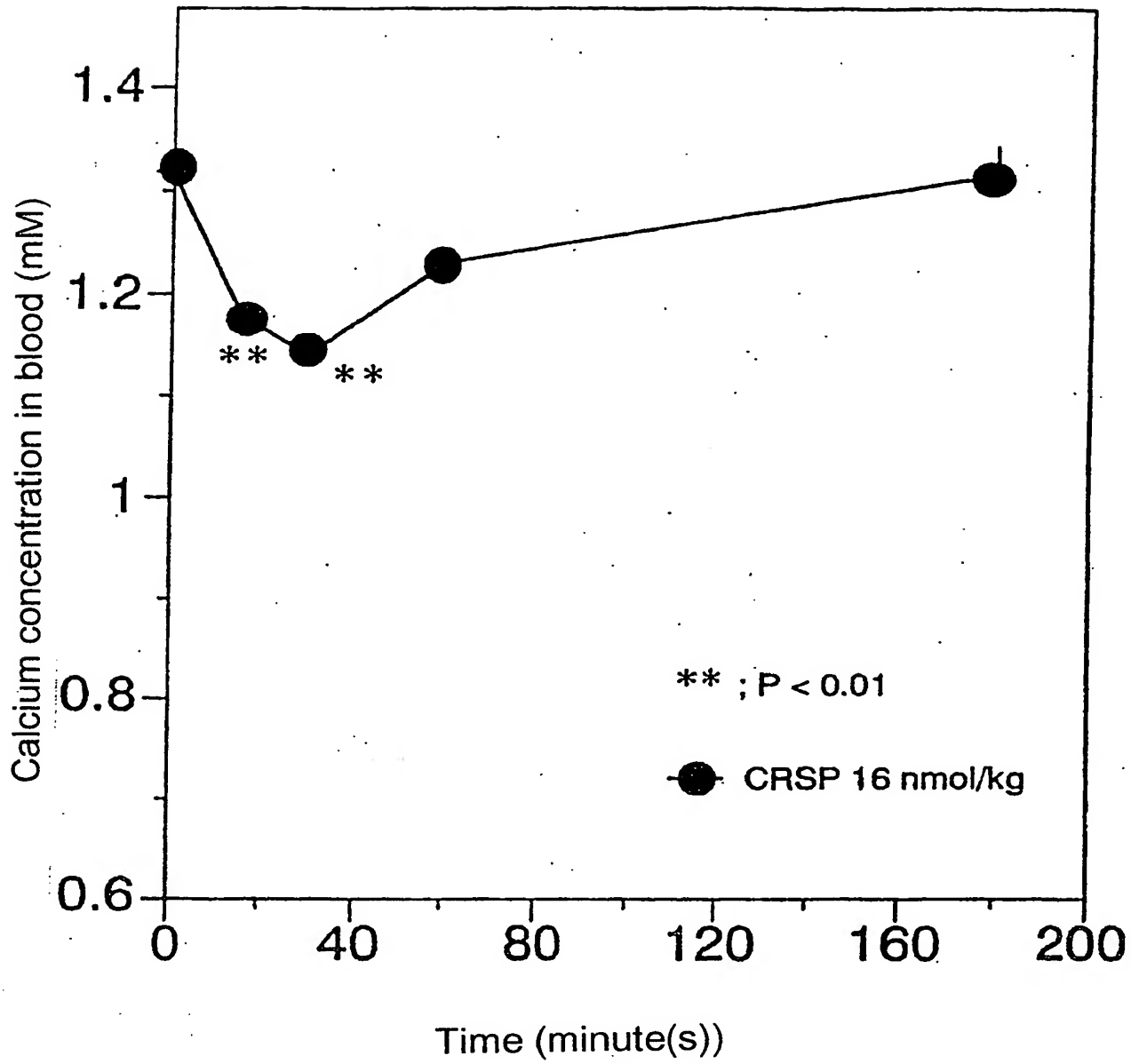

1.4
1.2
1
0.8
0.6
Calcium concentration in blood (mM)
**
**
** ; P < 0.01
CRSP 16 nmol/kg
0
40
80
120
160
200
Time (minute(s))

Fig. 14

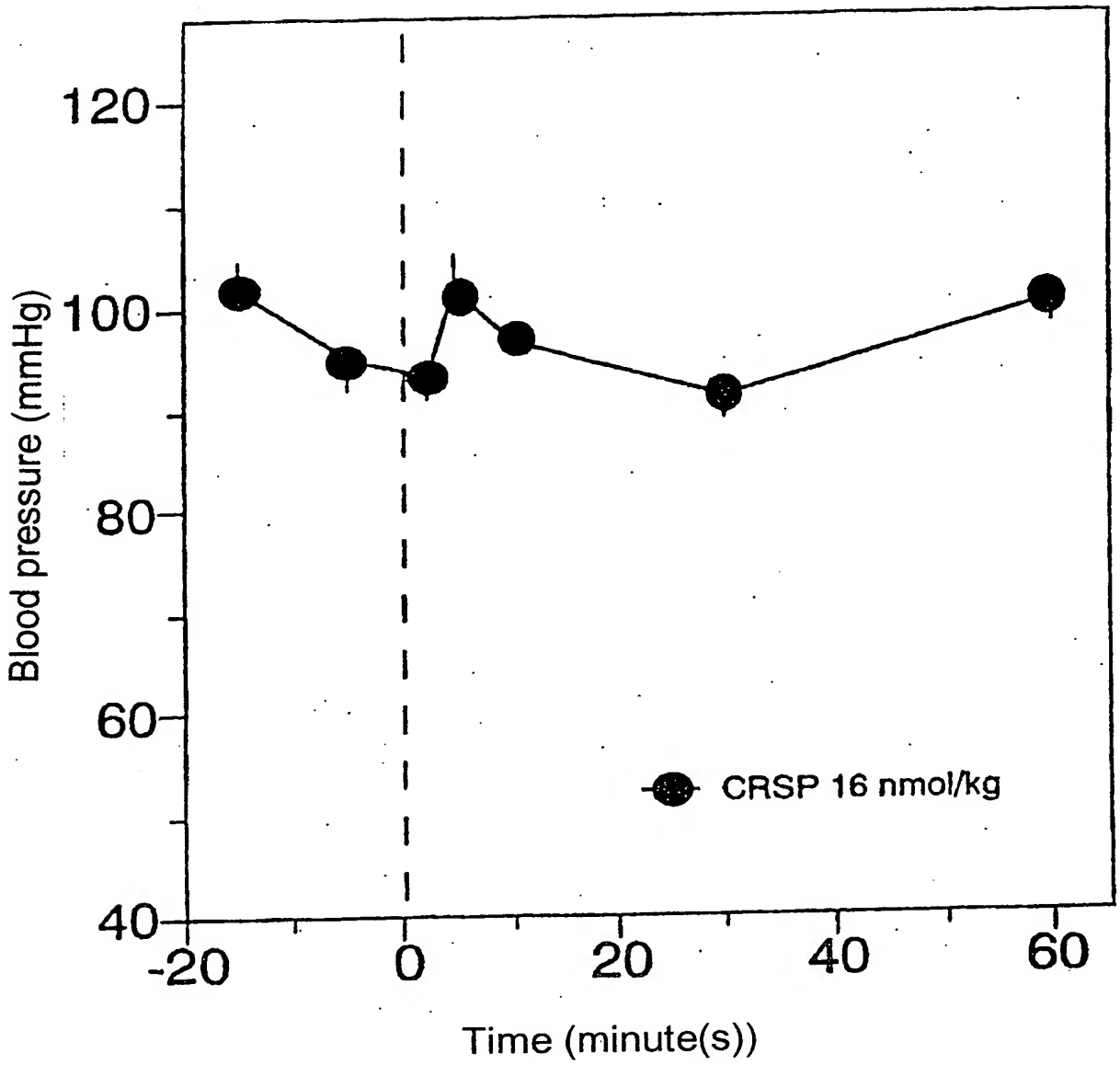

120
100
80
60
40
Blood pressure (mmHg)
-20
0
20
40
60
Time (minute(s))
CRSP 16 nmol/kg

Fig. 15

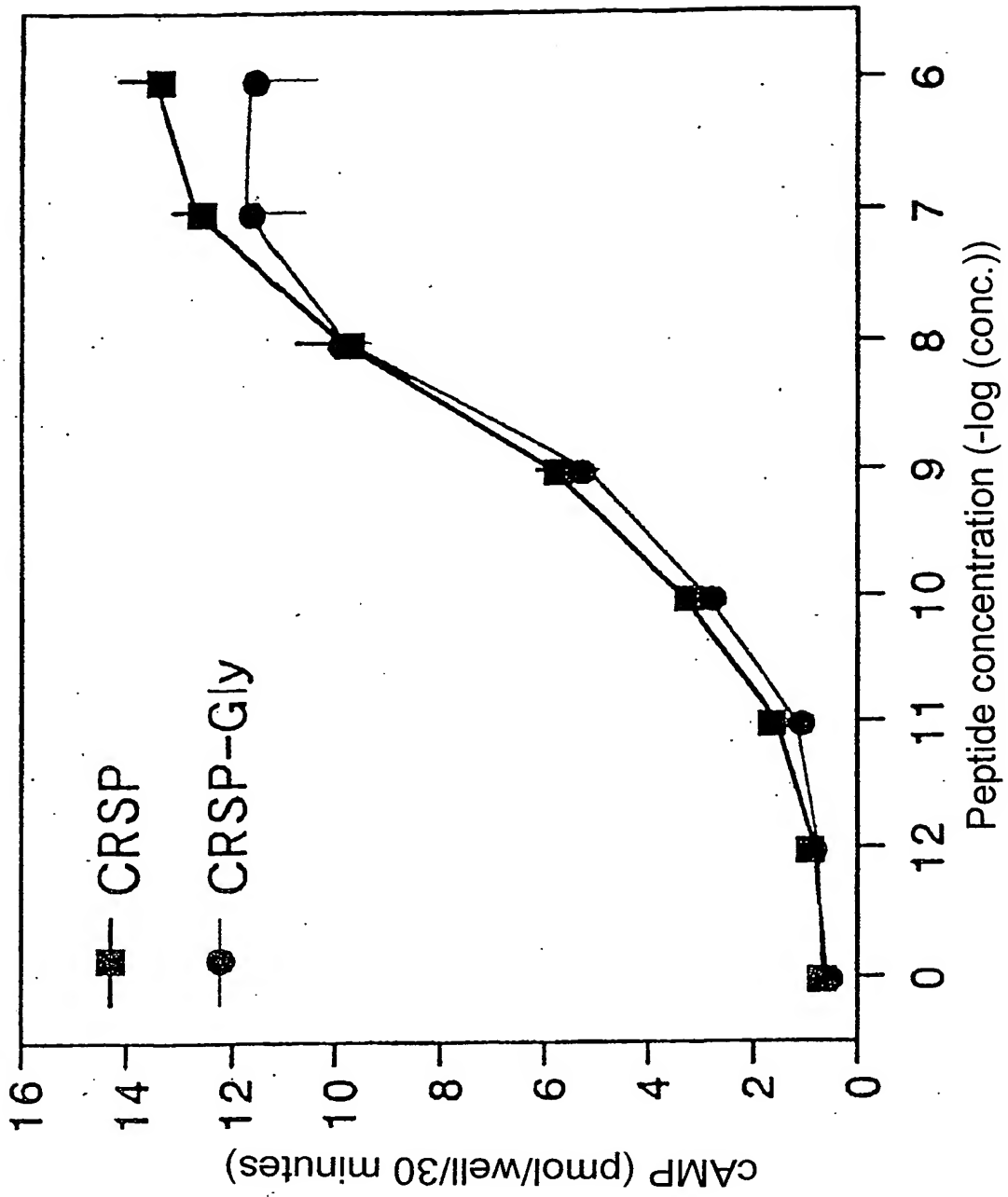
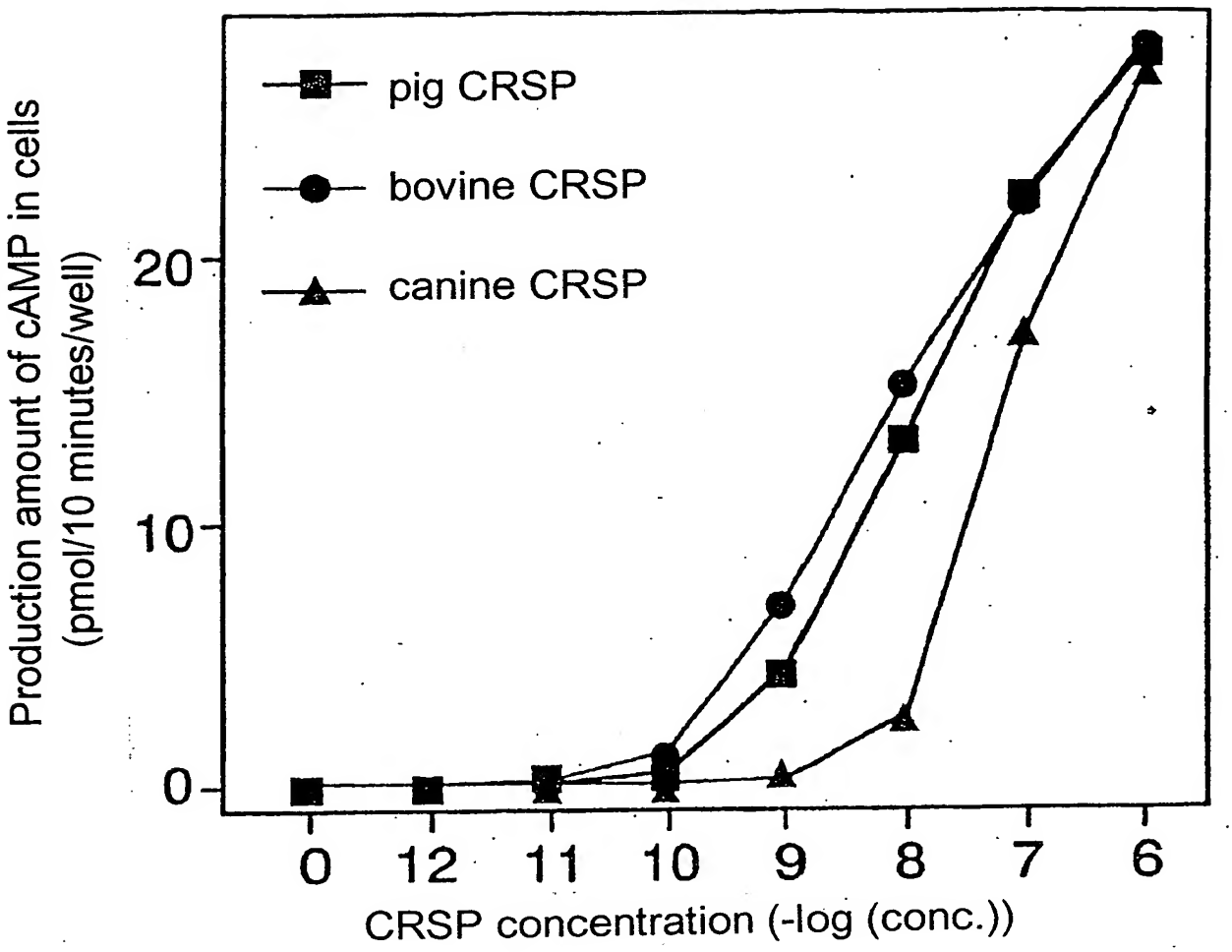

cAMP (pmol/well/30 minutes)
0
2
4
6
8
10
12
14
16
Peptide concentration (-log (conc.))
0
12
11
10
9
8
7
6
CRSP
CRSP-Gly

Fig. 16


pig CRSP
bovine CRSP
canine CRSP
Production amount of cAMP in cells
(pmol/10 minutes/well)
20
10
0
0
12
11
10
9
8
7
6
CRSP concentration (-log (conc.))

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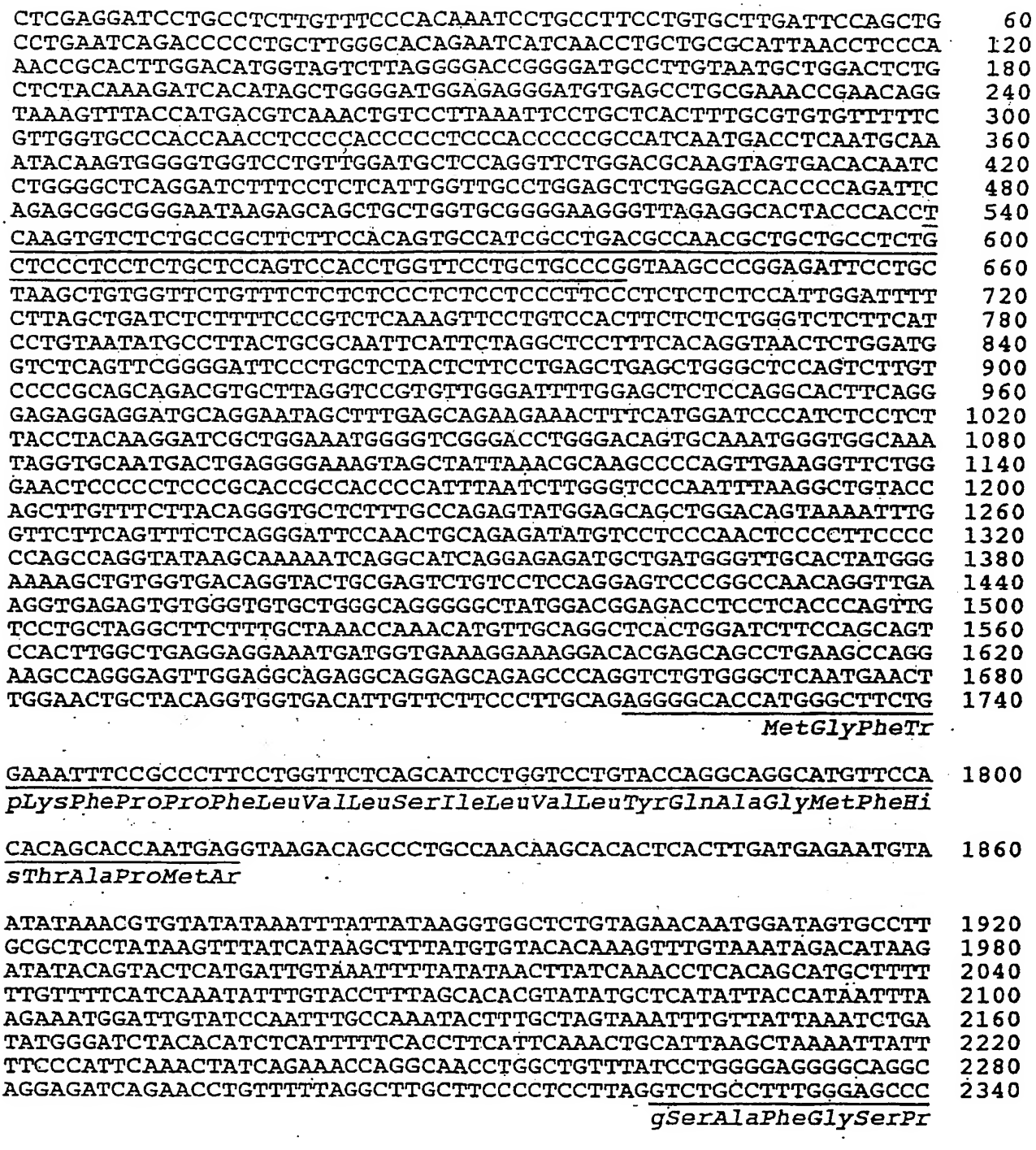
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CCTGAATCAGACCCCCTGCTTGGGCACAGAATCATCAACCTGCTGCGCATTAACCTCCCA 120
AACCGCACTTGGACATGGTAGTCTTAGGGGACCGGGGATGCCTTGTAATGCTGGACTCTG 180
CTCTACAAAGATCACATAGCTGGGGATGGAGAGGGATGTGAGCCTGCGAAACCGAACAGG 240
TAAAGTTTACCATGACGTCAAACTGTCCTTAAATTCCTGCTCACTTTGCGTGTGTTTTTC 300
GTTGGTGCCCACCAACCTCCCCACCCCCTCCCACCCCCGCCATCAATGACCTCAATGCAA 360
ATACAAGTGGGGTGGTCCTGTTGGATGCTCCAGGTTCTGGACGCAAGTAGTGACACAATC 420
CTGGGGCTCAGGATCTTTCCTCTCATTGGTTGCCTGGAGCTCTGGGACCACCCCAGATTC 480
AGAGCGGCGGGAATAAGAGCAGCTGCTGGTGCGGGGAAGGGTTAGAGGCACTACCCACCT 540
CAAGTGTCTCTGCCGCTTCTTCCACAGTGCCATCGCCTGACGCCAACGCTGCTGCCTCTG 600
CTCCCTCCTCTGCTCCAGTCCACCTGGTTCCTGCTGCCCGGTAAGCCCGGAGATTCCTGC 660
TAAGCTGTGGTTCTGTTTCTCTCTCCCTCTCCTCCCTTCCCTCTCTCTCCATTGGATTTT 720
CTTAGCTGATCTCTTTTCCCGTCTCAAAGTTCCTGTCCACTTCTCTCTGGGTCTCTTCAT 780
CCTGTAATATGCCTTACTGCGCAATTCATTCTAGGCTCCTTTCACAGGTAACTCTGGATG 840
GTCTCAGTTCGGGGATTCCCTGCTCTACTCTTCCTGAGCTGAGCTGGGCTCCAGTCTTGT 900
CCCCGCAGCAGACGTGCTTAGGTCCGTGTTGGGATTTTGGAGCTCTCCAGGCACTTCAGG 960
GAGAGGAGGATGCAGGAATAGCTTTGAGCAGAAGAAACTTTCATGGATCCCATCTCCTCT 1020
TACCTACAAGGATCGCTGGAAATGGGGTCGGGACCTGGGACAGTGCAAATGGGTGGCAAA 1080
TAGGTGCAATGACTGAGGGGAAAGTAGCTATTAAACGCAAGCCCCAGTTGAAGGTTCTGG 1140
GAACTCCCCCTCCCGCACCGCCACCCCATTTAATCTTGGGTCCCAATTTAAGGCTGTACC 1200
AGCTTGTTTCTTACAGGGTGCTCTTTGCCAGAGTATGGAGCAGCTGGACAGTAAAATTTG 1260
GTTCTTCAGTTTCTCAGGGATTCCAACTGCAGAGATATGTCCTCCCAACTCCCCTTCCCC 1320
CCAGCCAGGTATAAGCAAAAATCAGGCATCAGGAGAGATGCTGATGGGTTGCACTATGGG 1380
AAAAGCTGTGGTGACAGGTACTGCGAGTCTGTCCTCCAGGAGTCCCGGCCAACAGGTTGA 1440
AGGTGAGAGTGTGGGTGTGCTGGGCAGGGGGCTATGGACGGAGACCTCCTCACCCAGTTG 1500
TCCTGCTAGGCTTCTTTGCTAAACCAAACATGTTGCAGGCTCACTGGATCTTCCAGCAGT 1560
CCACTTGGCTGAGGAGGAAATGATGGTGAAAGGAAAGGACACGAGCAGCCTGAAGCCAGG 1620
AAGCCAGGGAGTTGGAGGCAGAGGCAGGAGCAGAGCCCAGGTCTGTGGGCTCAATGAACT 1680
TGGAACTGCTACAGGTGGTGACATTGTTCTTCCCTTGCAGAGGGGCACCATGGGCTTCTG 1740
MetGlyPheTr
GAAATTTCCGCCCTTCCTGGTTCTCAGCATCCTGGTCCTGTACCAGGCAGGCATGTTCCA 1800
pLysPheProProPheLeuValLeuSerIleLeuValLeuTyrGlnAlaGlyMetPheHi
CACAGCACCAATGAGGTAAGACAGCCCTGCCAACAAGCACACTCACTTGATGAGAATGTA 1860
sThrAlaProMetAr
ATATAAACGTGTATATAAATTTATTATAAGGTGGCTCTGTAGAACAATGGATAGTGCCTT 1920
GCGCTCCTATAAGTTTATCATAAGCTTTATGTGTACACAAAGTTTGTAAATAGACATAAG 1980
ATATACAGTACTCATGATTGTAAATTTTATATAACTTATCAAACCTCACAGCATGCTTTT 2040
TTGTTTTCATCAAATATTTGTACCTTTAGCACACGTATATGCTCATATTACCATAATTTA 2100
AGAAATGGATTGTATCCAATTTGCCAAATACTTTGCTAGTAAATTTGTTATTAAATCTGA 2160
TATGGGATCTACACATCTCATTTTTCACCTTCATTCAAACTGCATTAAGCTAAAATTATT 2220
TTCCCATTCAAACTATCAGAAACCAGGCAACCTGGCTGTTTATCCTGGGGAGGGGCAGGC 2280
AGGAGATCAGAACCTGTTTTTAGGCTTGCTTCCCCTCCTTAGGTCTGCCTTTGGGAGCCC 2340
gSerAlaPheGlySerPr

Fig. 17

(continued)

```
TTTTGATCCTGCTACCCTCTCTGAGGAGGAATCACGCCTCCTTTTGGCTGCAATGGTGAA  2400
oPheAspProAlaThrLeuSerGluGluGluSerArgLeuLeuLeuAlaAlaMetValAs

TGACTATGAGCAGATGAAGGCCCGTGAGATGCAGAAGCAGAGGGCACAGGGCTCCGGGTA  2460
nAspTyrGluGlnMetLysAlaArgGluMetGlnLysGlnArgAlaGlnGlySerGl

AGGTTCCCTGCCCAAGGACAACAGGGCATCCCTTTCTTCCTCTGGTCAGGCCCAGGAAGG  2520
CATATTTTAAAGTCACTTTTGAGTTTTCTGACCCCCCTGGACATGTCTGTGGGATGATTA  2580
TGGCATTTCCCCTGACGGCCTAGGATTTTCTGCTGTGATGACCTTTTCTAGCAGAAATAC  2640
TCAAGGTTCACTGGTCCTCTCAAGGCAGTAGTCTTCCATGACGATTCTGTCGTACAGCAC  2700
CTGCACTCAACCTCTCACTGACGGGCCTTTTCTTTCTTTATCCCACAAATCAGCATCAGT  2760
                                                      yIleSer

GTCCAGAAGAGATCCTGCAACACTGCCACCTGCATGACCCATCGGCTGGTGGGCTTGCTC  2820
ValGlnLysArgSerCysAsnThrAlaThrCysMetThrHisArgLeuValGlyLeuLeu

AGCAGATCTGGGAGCATGGTGAGGAGCAACCTGTTGCCCACCAAGATGGGCTTCAAAGTC  2880
SerArgSerGlySerMetValArgSerAsnLeuLeuProThrLysMetGlyPheLysVal

TTTGGTGGGCGCCGCAGGAACTTTTGGATCTGAGCAGTGGGATGATTCCAGGAGGAAGGT  2940
PheGlyGlyArgArgArgAsnPheTrpIle***

GACTGCCCTTTTTGTACCTTCGGGTGGGAGGACAGAGGACTGGGTATTGCAGGGGTGCAT  3000
TCCACACCCTAACCCTCTGTGAGCGCATGGGGGTAAAACCTCCACATGGCAAGGTGCCCA  3060
CACCAGTGTCTGGAGAAAGGACTGATAATCCCTATAACTGAAACATTGGGCTCTTTCTCT  3120
CTGTTTCTCCAGTCTCTCCCTGTGACACTGACATCATCTGCCAGGAAATATAGACCCTGT  3180
TTACTTAAAACACTGTTCCCTGGGTATTAATTGGGGTCCAGCTCTAGCATTAGAATTTGA  3240
AAGGTAATGACCCTACCCTTTTGGAGCATACCTTACAATGTTATGAACTTGGAGCATAGA  3300
CTCGGATTCAAATACTGTGTCTGTCTTCCACTAACTGTGACCATAGGCAAGTATGCCTCT  3360
GAGCCTCAGCTTCTCCTTGTAACTTGAAGGCAACAATAGTATCCTCAATATAAAAATTAA  3420
TTAGTATAACATATGACAAGAGCCTGTTAACTAAGAATTAATAACATTCTGTTACTTTTT  3480
TCCCTCCTAGGTTACTATGACTCTGAACTCTACTTCGTTTAATTTACAATGAAAGCAACC  3540
TACTAAAAAATAGCATGGAAGACATCCATGTATGCATGCTTCTGGAAACTGAAAACACTC  3600
TTTTCCTTGAAATAAACTAAAACTAAATGCAAAATAAAATCAATGCATCAATGCAGTTAC  3660
CTTGTGTGCATCTTTTGTGTATATGATTCTATAATATGATGCATGTCTCATTAGGTTTAA  3720
TGGTAGCAAATCTGGCCCCTGTCAGCCAACCTGTTGGTGGGGGCAGCTCTGCTAAACCTC  3780
AGGGTCACATGAATTC                                               3796
```

Fig. 18

```
GGATCCACTAGTTCTAGATAAAATGGACAAATACCTAGAAACAGAAGACCTACCAAGATG      60
GAAGGATGAAGAAATAGAAAATTCAAATACACCTATGACTAGGAAGGAGAATGAAGCATT     120
AATCCAAAATCTTCCAACAAAGAAAAGCCCTGGATACGATGGCCTCATTGGTGAATAGTA     180
CCAGACATTTAAAGAAAACGAATACCAATCCTTGTCAAACTTTTCCAAAAACCTGAAGAG     240
AAAGGACACACCCTAACCTATTCTATGAGGCAGGCCAACATTACTCTGATACCAAAGATG     300
GAGAAAGATTCTGCAAGGAGAAAACCCCTACAGACAAAATCCTTTATGACATGGATGTGG     360
AAACCCTCAACAGTATGCTAGGGAATTGAATTCAGAAGCGTATTAAAAGGATCCTACAAC     420
ATGACCAAGTGGGATGAATTTCTGGAATGCAAGGATGATTCAAAATATGAAAATTGATCA     480
AAGTGTTATATCACAATAATGGAATGTAGGGAAAAACACACCTGATTATTTCCACTGATA     540
CAGAAAATTATTTAGTAAAATTCAATACCTTTTCAGGATTAAAAACAAAAACTAGGTATA     600
GAAGGAGACTGCCTCAGCACAATACAACTATATATGAAAAACCAACACCAACACCATAAT     660
CCAGGGTGGAAAACTGAAAGCTTTTCCCCTAAGATCTGGAAGAAAATGGAAAAAAATTTT     720
TAAGAATTTTCAGACAGATTTGGGTCTCTGGTACACTCTGAGAAATCATCTTTTAGAATT     780
TTTTTTTTTTAAAAATAAGCACAAGAATTTCATTTAAAAGAAGGGAAATAACATAGCCTT     840
CAGAGTTTATCAGGAGGTGTAATTTTTTTTTCCACACTAGATTGTGGCTACCTGATGCTA     900
ATTTTGAGGTTTAAACATAATGAAATAAGATTGTACAGCCAAGTGCCAGCTAGTCATGGA     960
ACTTTTACCTCAGTACTGTTTAGTGCTTCAGTCCTAAGAAGTTTCAGGGAGGGCTGCGTG    1020
CAATACAAGTAATCGGTACTTGCTGAAGGTCTAAAATTTCGAGTGCACTTGGTAAATCAG    1080
GGATGGGCGCAGAGGAGACTGGTTCTGTAACTCAGACTAGTGAACCCTAGAATTTAGAAA    1140
GGGTACTTTTGTGCTCCAAGCAAATCCTGTTCTACCTAACTAGGTCCAAATGCTCTGCAG    1200
GCTGTAGTTAGAGCCCTCTCATAGCAGGGAGACTGCCTTGGTGAATCTGCCAGAGGAAAT    1260
GAATTTCCATTCACATTCATTCAACAAACATTGGGCGAGTGCCACCTCATGTGCAAAACA    1320
TGGTGCTAAGTGCTAAAGAAAAGATGTTGTTTTGTAAACTTACCCGCAGCTCAGAGCCAG    1380
GACTTCTTGGAAAGTCAGAGGACTTGAGGAAGGAGTTCATCTCAGCCCCTCCCTCACTGG    1440
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CTTAGCCATAGTGCAGCCACCTTTGCATTGATCAAAACTGTGGTTCTTCCAATGAAAAAA    1740
GACATCCCCAGACACACATACTTACAAATGATTTCAGAAGATTGATAGGTCGGAAATCTC    1800
AGGTTTTGGATTTTATTTGCAAAAGCGTTTTGCGCCTGAGTTTTAAACTTTTTTTTTTTT    1860
TTTTTTTTTTTGTATTTTTTCACTTCTAGGGCGGCTTCGGCGGCATATGGAAATTCCCAG    1920
```

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GCTAGGGGTCTAATAGGCGCCATAGCCACCGGCCTACGCCAGAGCTACTGCAACGCTGGA  1980
TCCGAGCCGCATCTGCAACCTACACCACAACTCACGGCAATGCCGGATCGTTAACCCACT  2040
GAGCAAGGCCAGGGATCGAACCCGCAACCTCATGGTTCTTACTCAGATTCGTTAACCACT  2100
GCGCCACGACGGCCACTCCAACCTACCAGACTCTTAATTAAGTAGCAGAGTCCAATTTAC  2160
ATGCCGCACCACATCTGTTACCCCGAGTTAGCGAACTTGGTCTTGGAACTAACTCCTCAC  2220
GGAAAGCCAAGCCGAGTACTCATAATTATAGTGCTGAACCCCCAAACCCTGGTCTGGCCT  2280
GTGCACCCAATTTTTGCTTGTAGTAGAAACCAGGATTTACGGAGCCCGAGCAGTCCGCCA  2340
TCCTGAACTCTTCTCTTTCTCACCTTGCCTTCATCCTGGAGTGCACCTGCCCTCTATGAA  2400
CCAGTTTTTCCGTTCCCTTGGTCTCCCGATCCGTTGTCTATCCTGAGGAGAGCGAGATGC  2460
AAGCACCCGATTCCCTAGCCCCAATATTTTATTCTCTTGCGAAGGAGAAAAGTTGAATAA  2520
GGGTATCTTGTAAATGAGATGTTCCGAGTCCAGAGAGCACAAACCGGCAAGGGGAACAGA  2580
TGTGCCGCGAGGCAGGTGTGCGGAAAGATATAGAGAAGGCTCAGGTTCGGACCTGTGGCT  2640
CAGGTCACACTCATGGCAGAGTTCGGTTTAATTTCGGCTCTGCCTGGGGGAACCACTTAA  2700
CTGGGGTCCTTGCTGCCCTCCACCGGCCCCCGATGCTGTTGCAGCGTTTGCCGCGCTGGA  2760
GGGTCTGTACAGGCTGCTGCGGTTTATCGCTGTGTGCTCAGACACGGTGATCCTGAGCAG  2820
CATCCGAACTGGATTGGGGTAGATGTGGGCACAGGGCTGGAATCACAGGTCACTGGAACA  2880
TCTTGGCAAACAGCAGCCGGAAGCAAGGGGCAGCTGGGCAAATGGTTCTGGGACATTGAT  2940
GGGCTTAGATGATGAATGGTGGGGCTGGAGGTCGGCTTGGCGGCTTGGGAAGCATCTATG  3000
CCGTGCACGTCCCTGCCCAAGCCCAGTAGGGCACCATCTTTCCCCATATGGTGGACCGAC  3060
CACCCAGCGCGACTCCAGACATCCGCACAGAGGTGGGGATTGGGCAAATGGATCGCGATC  3120
GCACAGAATCCCCTCTGCACTTCCCTGGTAAGCTCTTCTCGATCCCTCCCTGGGTGGAGA  3180
GCAGGTACATGGCTACTAATGATACCACTCCTTGAAGACGGGAATATGATGCCCCGTTCC  3240
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GGCACAGCTGGAACAAAGTTTCCGTGTGACAAAGACTGTGATCCTGCCTCTTGTTTCCCA  3360
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CTCCCACCCCCGCCATCAATGACCTCAATGCAAATACAAGTGGGGTGGTCCTGTTGGATG  3720
CTCCAGGTTCTGGACGCAAGTAGTGACACAATCCTGGGGCTCAGGATCTTTCCTCTCATT  3780
GGTTGCCTGGAGCTCTGGGACCACCCCAGATTCAGAGCGGCGGGAATAAGAGCAGCTGCT  3840
```

Fig. 19

```
GGTGCGGGGAAGGGTTAGAGGCACTACCCACCTCAAGTGTCTCTGCCGCTTCTTCCACAG  3900
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TTCCTGCTGCCCGGTAAGCCCGGAGATTCCTGCTAAGCTGTGGTTCTGTTTCTCTCTCCC  4020
TCTCCTCCCTTCCCTCTCTCTCCATTGGATTTTCTTAGCTGATCTCTTTTCCCGTCTCAA  4080
AGTTCCTGTCCACTTCTCTCTGGGTCTCTTCATCCTGTAATATGCCTTACTGCGCAATTC  4140
ATTCTAGGCTCCTTTCACAGGTAACTCTGGATGGTCTCAGTTCGGGGATTCCCTGCTCTA  4200
CTCTTCCTGAGCTGAGCTGGGCTCCAGTCTTGTCCCCGCAGCAGACGTGCTTAGGTCCGT  4260
GTTGGGATTTTGGAGCTCTCCAGGCACTTCAGGGAGAGGAGGATGCAGGAATAGCTTTGA  4320
GCAGAAGAAACTTTCATGGATCCCATCTCCTCTTACCTACAAGGATCGCTGGAAATGGGG  4380
TCGGGACCTGGGACAGTGCAAATGGGTGGCAAATAGGTGCAATGACTGAGGGGAAAGTAG  4440
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CCAGAGTATGGAGCAGCTGGACAGTAAAATTTGGTTCTTCAGTTTCTCAGGGATTCCAAC  4620
TGCAGAGATATGTCCTCCCAACTCCCCTTCCCCCCAGCCAGGTATAAGCAAAAATCAGGC  4680
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hrLeuThrGluGluGluValSerLeuLeuLeuValAlaMetValLysAspTyrValGlnM
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第 19 図 続き

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Fig. 20

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H  T  A  P  V  R  L  P  L  E  S  S  F  D  S  A  T  L  T  E     43

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V  L  E  Q  E  S  E  D  F  S  I  T  A  Q  E  K  S  C  N  T     83

GCTAGCTGTGTGACCCACAAGATGACAGGCTGGCTGAGCAGATCTGGGAGCGTGGCTAAG  309
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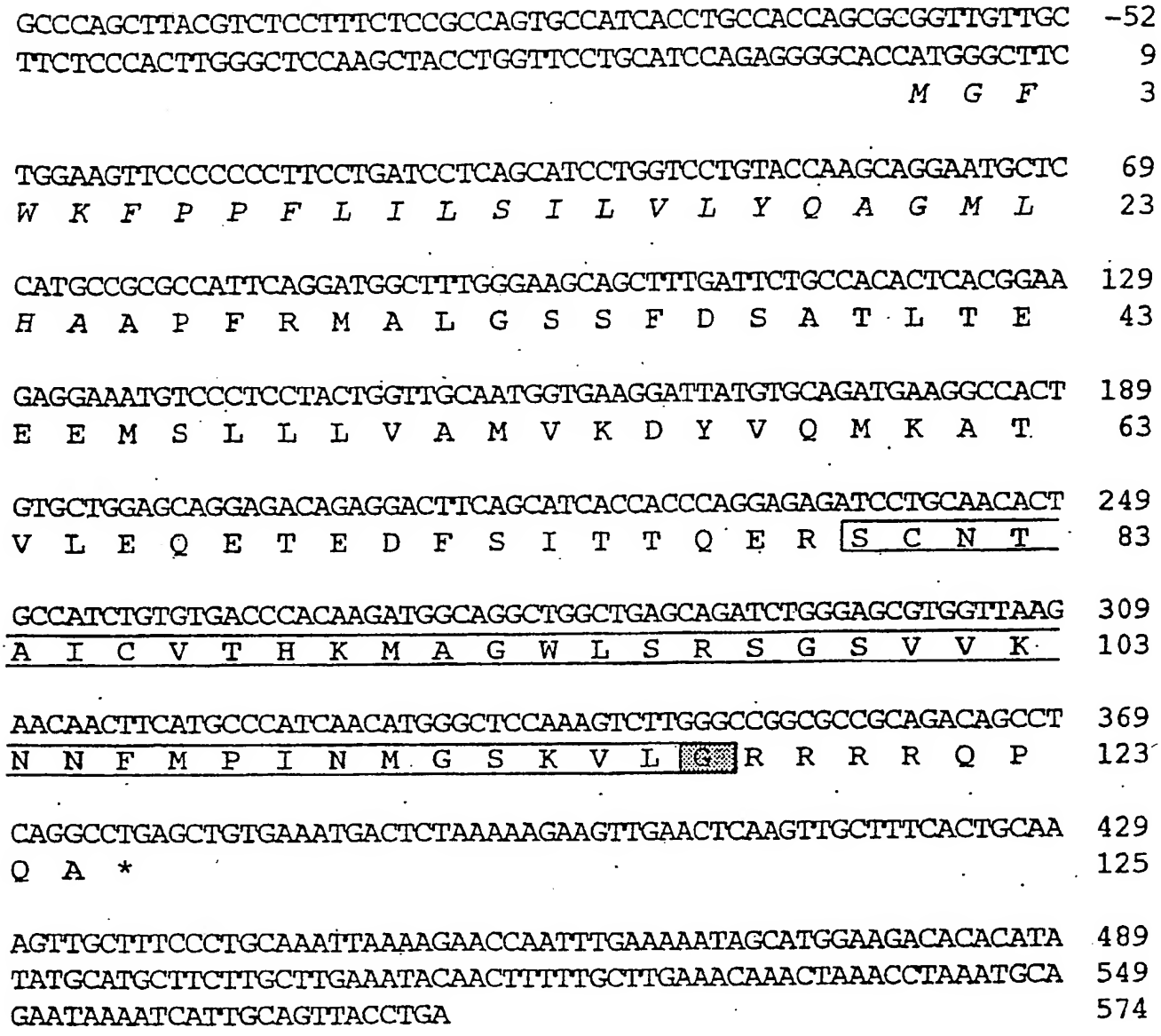
Fig. 21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E E M S L L L V A M V K D Y V Q M K A T 63
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Q A * 125
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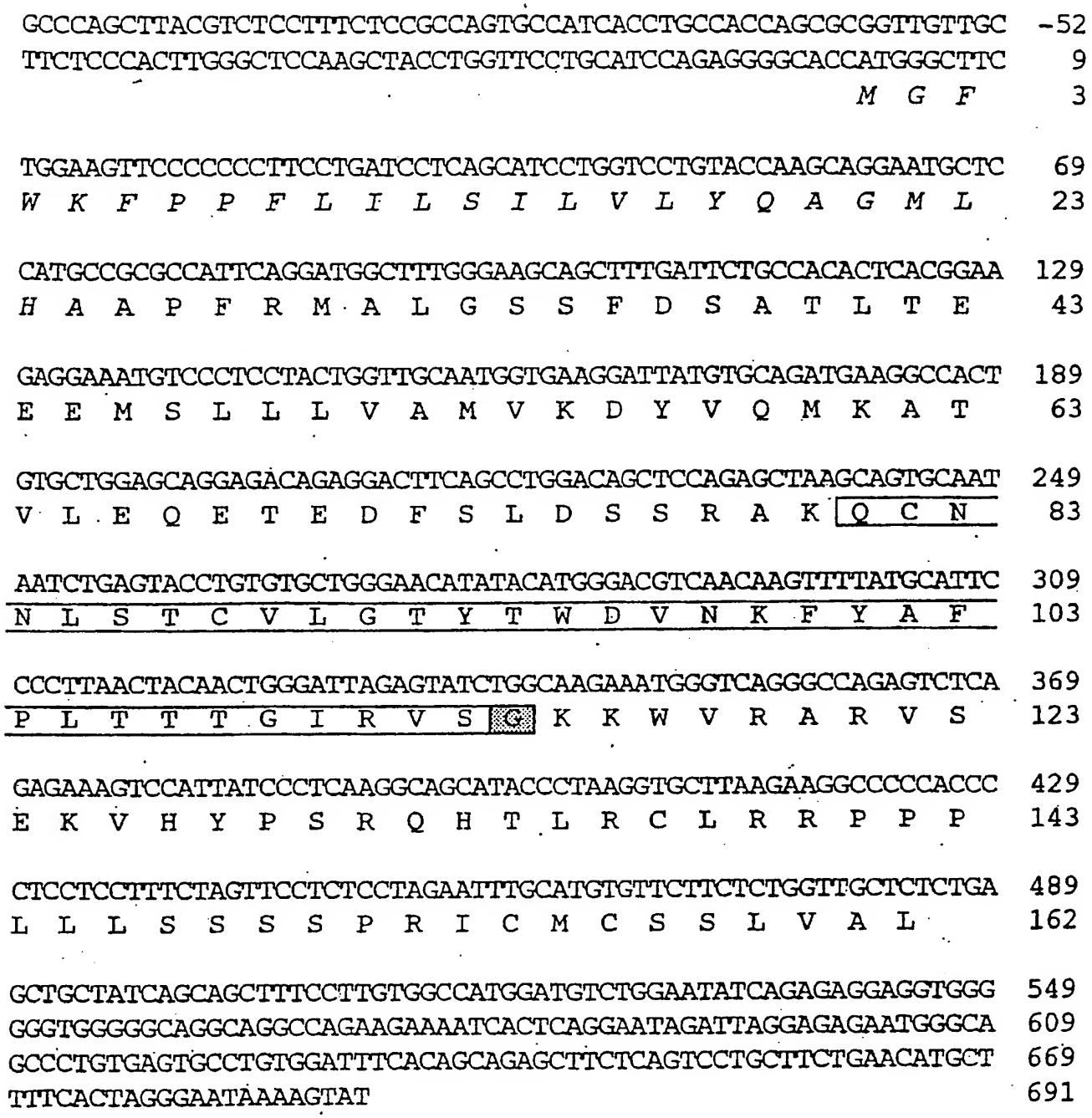
Fig. 22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W K F P P F L I L S I L V L Y Q A G M L 23
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L L L S S S S P R I C M C S S L V A L 162
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Fig. 23

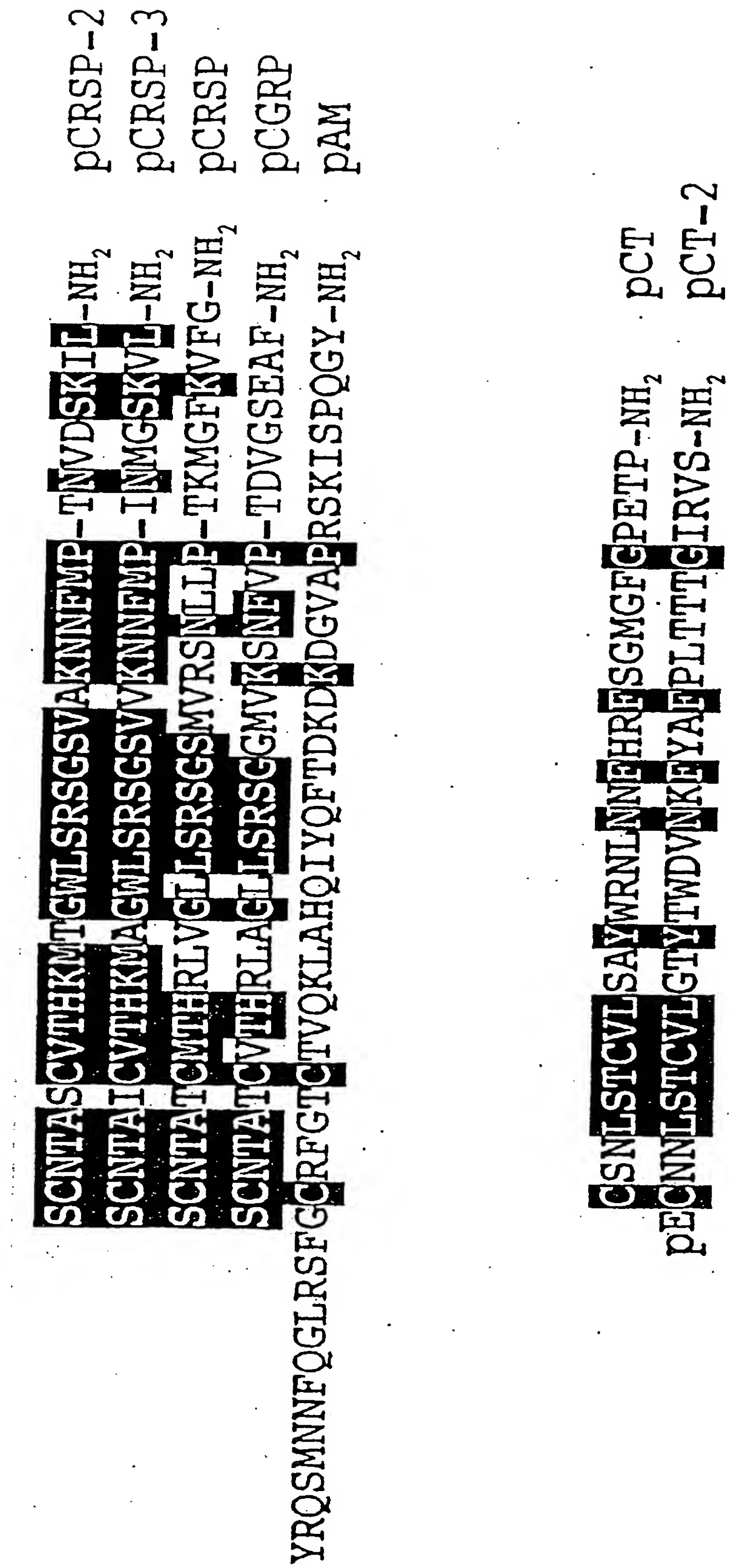
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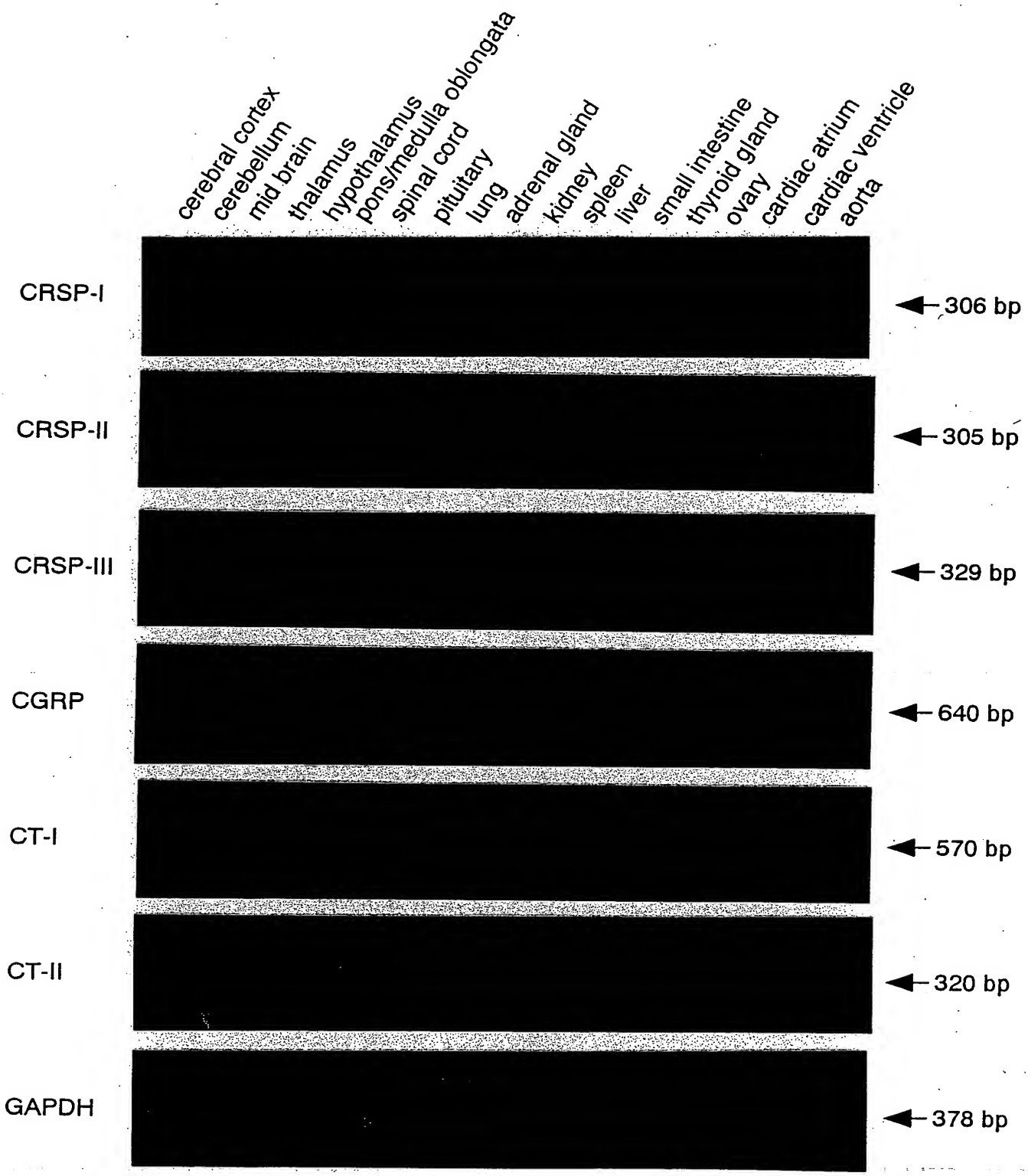
Fig. 24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cerebellum
mid brain
thalamus
hypothalamus
pons/medulla oblongata
spinal cord
pituitary
lung
adrenal gland
kidney
spleen
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thyroid gland
ovary
cardiac atrium
cardiac ventricle
aorta
CRSP-I
306 bp
CRSP-II
305 bp
CRSP-III
329 bp
CGRP
640 bp
CT-I
570 bp
CT-II
320 bp
GAPDH
378 bp

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